

CLAIMS

I claim:

1. A method of providing electronic surveillance in a telecommunications system, the method comprising:
passing an outgoing correlation key;
receiving a destination identifier and an incoming correlation key;
correlating the outgoing correlation key with the incoming correlation key;
and
based at least on the correlating, sending an electronic surveillance message indicating the destination identifier.
2. The method of claim 1 wherein the passing passes the outgoing correlation key via call setup signaling.
3. The method of claim 2 wherein the call setup signaling passes the outgoing correlation key via a billing identity parameter.
4. The method of claim 2 wherein the call setup signaling passes the outgoing correlation key via a calling line identity parameter.
5. The method of claim 2 wherein the call setup signaling passes the outgoing correlation key via a call reference parameter.
6. The method of claim 1 wherein the receiving receives the incoming correlation key via call setup signaling sending a billing or calling line identity parameter.
7. The method of claim 1 wherein the outgoing correlation key comprises a charge number and a calling party identity parameter.

8. The method of claim 1 wherein the incoming correlation key is received as a calling party number parameter as part of call setup signaling.

9. The method of claim 1 wherein the incoming correlation key is
5 received as a billing number parameter as part of call setup signaling.

10. The method of claim 1 wherein the incoming correlation key is received as a parameter in an Initial Address Message.

10 11. The method of claim 1 wherein the incoming correlation key is received via ANSI-ISUP signaling.

12. The method of claim 1 wherein the incoming correlation key is received via ISDN-PRI signaling.
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13. The method of claim 1 wherein the telecommunications network comprises a GSM network.

14. The method of claim 1 wherein the incoming correlation key
20 comprises an Automatic Number Identification field received via R1 Feature Group-D signaling.

15. The method of claim 1 wherein the electronic surveillance message complies with a version of the J-STD-025 standard relating to lawfully authorized
25 electronic surveillance.

16. The method of claim 1 wherein receiving the incoming correlation key comprises receiving the incoming correlation key from a switch comprising a service platform for determining the destination identifier.
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17. The method of claim 1 wherein the destination identifier is determined via a directory assistance call completion service.

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18. The method of claim 1 wherein the destination identifier is determined via a voicemail callback service.

5 19. The method of claim 1 wherein the destination identifier is determined via a prepaid service.

20. The method of claim 1 wherein the destination identifier is determined via a voice activated dialing service.

10 21. The method of claim 1 further comprising:
selecting a temporary identity from a pool of identities; and
using the temporary identity as the correlation key.

15 22. A computer-readable medium comprising computer-executable instructions for performing at least the following to provide electronic surveillance in a telecommunications system comprising at least a first switch and a second switch:
passing an outgoing correlation key from the first switch to the second
20 switch;
receiving from the second switch a destination identifier and an incoming correlation key via call setup signaling sending billing or calling line identity;
correlating the outgoing correlation key with the incoming correlation key;
and
25 based at least on the correlating, sending an electronic surveillance message indicating the destination identifier.

30 23. A method of performing electronic surveillance for a hairpin loop scenario in a telecommunications network comprising at least a first switch and a second switch, the method comprising:
storing a correlation identifier for a first call leg related to a service request directed to the second switch by the first switch;

detecting an attempt to establish a second call leg directed to a destination and forming a hairpin loop in conjunction with the first leg, wherein the detecting is based at least on the stored correlation identifier; and

- 5 based at least on detecting the attempt, sending an electronic surveillance message indicating the destination to a monitoring device.

24. The method of claim 23 further comprising:
avoiding the hairpin loop.

- 10 25. The method of claim 23 wherein the detecting is further based on a incoming identifier associated with the second call leg.

- 15 26. The method of claim 23 wherein the detecting is further based on a billing parameter associated with an Initial Address Message associated with the second call leg.

- 20 27. A method comprising:
passing a correlation key from a first switch to a second switch via call setup signaling implemented for billing or calling line identity;
receiving from the second switch the correlation key;
correlating call legs based at least on the correlation key; and
based at least on the correlating, sending a destination-indicating electronic surveillance message to a site monitoring a call related to the call legs.

- 25 28. The method of claim 27 wherein
the receiving comprises receiving a destination identifier; and
the destination-indicating electronic surveillance message comprises a parameter indicating the destination identifier.

29. A method of providing electronic call surveillance to a call monitoring device for a call redirected to a service platform switch for service processing comprising determining a destination indicated by a destination identifier, the method comprising:

- 5 for a call, passing an outgoing correlation key to the service platform switch via call control signaling implemented for billing or calling line identity;
receiving from the service platform switch the destination identifier for the call and an incoming correlation key;
correlating the outgoing correlation key and the incoming correlation key;
10 and
based at least on the correlating, sending a message indicating the destination identifier to the call monitoring device.

30. The method of claim 29 wherein the call is directed to the destination
15 via at least one of the following services:
directory assistance call completion;
voice activated dialing;
prepaid calling; and
voicemail callback.

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31. A method for dynamic correlation of call legs, the method comprising:
receiving a first incoming call leg from a call source;
providing a first outgoing call leg associated with the first incoming call leg
25 to a service platform, wherein the first outgoing call leg includes a correlation key;
receiving a second incoming call leg for the call session from the service platform, wherein the second incoming call leg includes the correlation key;
providing a second outgoing call leg associated with the second incoming call leg to a destination;
30 employing the correlation key to correlate the first outgoing call leg with the second incoming call leg; and

providing the destination of the second outgoing call leg to law enforcement monitoring the first incoming call leg.

32. The method of claim 31 further comprising:

5 determining the destination of the second outgoing call leg is different from an initial destination.

10 33. A method of achieving electronic surveillance during a hairpin loop scenario in a telecommunications network comprising at least a redirecting switch and a service platform switch, the method comprising:

receiving a call at the redirecting switch for which processing at the service platform switch is to be performed;

redirecting the call to the service platform switch, wherein the redirecting comprises passing an outgoing identifier via call setup signaling;

15 receiving an incoming call leg at the service platform switch, wherein the incoming call leg indicates a destination identifier and is associated with an incoming identifier via call setup signaling;

determining that the outgoing identifier and the incoming identifier can be correlated; and

20 responsive to determining that the outgoing identifier and the incoming identifier are identical, sending an electronic surveillance message to a monitoring device, wherein the electronic surveillance message indicates the destination identifier.

25 34. A telecommunications switch software system for use in a telecommunications switch, the system comprising:

a list of correlation keys for which call legs have been directed from the telecommunications switch;

30 compare logic operable to collect call set up signaling information from a call leg directed to the telecommunications switch and determine whether the information appears in the list of correlation keys, wherein the call leg directed to the telecommunications switch comprises a destination identifier; and

electronic surveillance message construction logic responsive to the compare logic and operable to construct an electronic surveillance message indicating the destination identifier.

5 35. The telecommunications switch software system of claim 34 wherein the call set up signaling information comprises an Automatic Number Identification.

10 36. The telecommunications switch software system of claim 34 further comprising:
 a stored list of identifiers indicating parties under surveillance; and
 correlation key sending logic operable to limit sending correlation keys to call legs related to the parties indicated as under surveillance in the stored list.

15 37. The telecommunications switch software system of claim 34 further comprising:
 a stored pool of identities dedicated for use by the telecommunications switch software system; and
 identity substituter logic for temporarily replacing an actual identity with an identity selected from the pool of identities.

20 38. A system for performing electronic surveillance in a telecommunications system, the system comprising:
 means for storing call set up signaling information as correlation information for an outgoing call leg;
25 means for comparing the correlation information against call set up signaling information for an incoming call leg; and
 means operable to detect a match between the correlation information and the call set up signaling information for the incoming call leg and further operable to construct an electronic surveillance message after detecting a match.

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39. A method of upgrading a telecommunications switching system to generate electronic surveillance messages in a hairpin loop scenario, the method comprising:

- 5 upgrading at least one switch in the switching system to implement correlation to correlate call legs in the hairpin loop scenario and generate a destination-indicating electronic surveillance message responsive to the correlation;

10 wherein the correlation is based on call setup signaling supported by the switch, and the switch accommodates a hairpin loop with at least one service platform switch that need not be upgraded to process electronic surveillance messages in the hairpin loop scenario.

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